IN THE CLAIMS

This listing of the claim will replace all prior versions and listings of claim in the present application.

Listing of Claims

1. (currently amended)A method for signal transmission between a television camera and a video apparatus which are connected to each other through a transmission cable, said method comprising the steps of:

multiplexing a video signal and first control signals which are obtained from said television camera, by using a first time-division multiplexing circuit, to generate a first serial signal;

transmitting said first serial signal by using a predetermined first signal line in said cable;

transmitting a second control signal from said television camera to said video apparatus by using a predetermined second signal line in said cable;

separating said first serial signal obtained from said first signal line into ~~a~~ said video signal and said first control ~~signal~~ signals by a first de-multiplexing circuit of said video apparatus; and

transmitting third control signals from said video apparatus to said television camera by using third and fourth signal lines in said cable.

2. (original) The method according to claim 1, wherein said first control signals include control signals used in said video apparatus and said second control signal includes a clock signal for said television camera.

3. (original) The method according to claim 2, wherein said first serial signal is obtained by converting an image signal for each pixel of said television camera and said first control signals into serial data which has a divided-by-n (n: integer) period of that of said clock signal.

4. (original) The method according to claim 2, wherein said first control signal includes an IP signal.

5. (original) The method according to claim 2, wherein said third control signals include a trigger signal and a control signal for controlling said television camera.

6. (original) The method according to claim 5, wherein said control signal for controlling said television camera includes an IP signal.

7. (original) The method according to claim 1, wherein said third control signals obtained from said video apparatus are transmitted as de-multiplexed.

8. (original) The method according to claim 1, wherein said third control signals from said video apparatus include trigger signals used in said television camera, said trigger signal transmitting step comprising the steps of:

multiplexing said trigger signals by using a second time-division multiplexing circuit to generate a single second serial signal;

transmitting said second serial signal by using said third signal line in said cable; and

separating said second serial signal obtained from said third signal line into said third control signals by using a second de-multiplexing circuit.

9. (original) An apparatus for signal transmission between a television camera and a video apparatus, comprising:

a first connection circuit which is connected to said television camera;

a second connection circuit which is connected to said video apparatus; and

a transmission cable for electrically connecting said first connection circuit and said second connection circuit to each other, wherein:

said first connection circuit has a first time-division multiplexing circuit for multiplexing an image signal obtained from said television camera and first control signals and converting them into a first serial signal;

said second connection circuit has a first de-multiplexing circuit for de-multiplexing said multiplexed first serial signal into said image signal and a first control signal; and

said transmission cable has a first signal line for transmitting said first serial signal and a second signal line for transmitting a second control signal from said television camera to said video apparatus.

10. (original) The apparatus according to claim 9, wherein:

said second connection circuit has means for transmitting a third control signal which controls said television camera from said video apparatus;

said first connection circuit has means for receiving said third control signal; and

said transmission cable further has a third signal line for transmitting said third control signal.

11. (original) The apparatus according to claim 10, wherein said transmission cable further has a line for supplying power from said video apparatus to said television camera.

12. (original) The apparatus according to claim 9, wherein said multiplexing circuit converts an image signal for each pixel of said television camera and said first control signals into serial data which has a divided-by-n (n: integer) period of that of said clock signal.

13. (currently amended)The apparatus according to claim 9, wherein~~:~~ said second connection circuit has a second multiplexing circuit for time-division multiplexing trigger signals obtained from said video apparatus onto said third signal line; and

said first connection circuit has a second de-multiplexing circuit for de-multiplexing said multiplexed trigger signal obtained from said third signal line.

14. (original) The apparatus according to claim 10, said third control signal includes a signal for controlling exposure time and/or exposure start time of said television camera.

15. (original) The apparatus according to claim 10, wherein said third control signal includes a signal for controlling an image sampling period for images picked up by said television camera.

16. (new) A television camera apparatus for transmitting signals to a video apparatus comprising:

a camera unit which outputs a video signal and first and second control signals for controlling said video apparatus; and

an interface which multiplexes said video signal and said first control signal by using a time-division multiplexing circuit into a serial signal, receives said second control signal, and transmits said serial signal and said second control signal to said video apparatus which de-multiplexes said serial signal into said first control signal and said video signal and receives said second control signal.

17. (new) The television camera according to claim 16, wherein said first control signal includes control signals used in said video apparatus and said second control signal includes a clock signal for said television camera.

18. (new) The television camera according to claim 17, wherein said serial signal is obtained by converting an image signal for each pixel of said television camera and said first control signal into serial data which has a divided-by-n (n: integer) period of that of said clock signal.

19. (new) The television camera according to claim 17, wherein said first control signal includes an IP signal.

20. (new) The television camera according to claim 16, wherein said interface receives third control signals from said video apparatus for controlling said camera unit.

21. (new) The television camera according to claim 17, wherein said third control signals include a trigger signal and a control signal for controlling said camera unit.

22. (new) The television camera according to claim 21, wherein said control signal for controlling said camera unit includes an IP signal.

23. (new) The television camera according to claim 20, wherein said third control signals from said video apparatus are transmitted as de-multiplexed signals.

24. (new) The television camera according to claim 20, wherein said third control signals from said video apparatus include trigger signals used in said camera unit, and said trigger signals are multiplexed using another time-division multiplexing circuit included in said video apparatus to generate another serial signal which is transmitted to said camera unit and said another serial signal from said video apparatus is de-multiplexed into said third control signals by a de-multiplexing circuit included in said interface.

25. (new) A method for transmission between a television camera apparatus and a video apparatus comprising the steps of:

outputting from a camera unit a video signal and first and second control signals for controlling said video apparatus;

multiplexing said video signal and said first control signal by using a time-division multiplexing circuit into a serial signal;

receiving said second control signal; and

transmitting said serial signal and said second control signal to said video apparatus which de-multiplexes said serial signal into said first control signal and said video signal and receives said second control signal.

26. (new) The method according to claim 25, wherein said first control signal includes control signals used in said video apparatus and said second control signal includes a clock signal for said television camera.

27. (new) The method according to claim 26, wherein said serial signal is obtained by converting an image signal for each pixel of said television camera and said first control signal into serial data which has a divided-by-n (n: integer) period of that of said clock signal.

28. (new) The method according to claim 26, wherein said first control signal includes an IP signal.

29. (new) The method according to claim 26, further comprising the step of:

receiving third control signals from said video apparatus for controlling said camera unit.

30. (new) The method according to claim 26, wherein said third control signals include a trigger signal and a control signal for controlling said camera unit.

31. (new) The method according to claim 30, wherein said control signal for controlling said camera unit includes an IP signal.

32. (new) The method according to claim 29, wherein said third control signals from said video apparatus are transmitted as de-multiplexed signals.

33. (new) The method according to claim 29, wherein said third control signals from said video apparatus include trigger signals used in said camera unit, and said trigger signals are multiplexed using another time-division multiplexing circuit included in said video apparatus to generate another serial signal which is transmitted to said camera unit and said another serial signal from said video apparatus is de-multiplexed into said third control signals by a de-multiplexing circuit included in said interface.